Grade 7 Mathematics - Tough Practice Paper

Second Semester - Challenging Version

Instructions:

- Answer all the questions in the spaces provided.
- Show all necessary workings clearly.
- Calculators are not allowed.
- Part A: 2 marks each | Part B: 4 marks each | Part C: 5 marks each

Part A (2 marks each)

1. Find x if 5x - 3 = 2x + 6.

2. Express 84% as a fraction in its lowest form.

3. The base of a triangle is 9 cm and height is 4.5 cm. Find the area.

4. Simplify: (3/5) ÷ (1/4)

5. Simplify: a^4 × a^3 ÷ a^2

6. Evaluate: (–3) × 4 ÷ (–2)

7. Find the value of 2^4 + 3^2 – 5^2.

8. What is the median and the mode of: 3, 7, 3, 9, 5, 3, 8?

Part B (4 marks each)

1. 1. A circle has an area of 616 cm². Find its radius. Use π = 22/7.

2. 2. Determine which of the following lines are perpendicular:■ Line A: y = 2x + 1, Line B: y = -1/2x + 3, Line C: y = 2

3. 3. Solve for p: 3p - 4 = 2(p + 5)

4. 4. A fruit seller has 25 kg of apples. 8 kg are rotten. What percentage are good?

5. 5. Share Rs. 4800 among three people in the ratio 5:2:1.

6. 6. The mean of 3, 7, 5, x, 6 is 6. Find the value of x.

7. 7. Estimate √52 to one decimal place without using a calculator.

8. 8. A ship travels on a bearing of 135°. Draw a rough sketch and label it clearly.

9. 9. A shape consists of a rectangle and a semicircle. Rectangle is 10 cm × 4 cm, diameter of semicircle is 10 cm. Find

10. 10. Convert 3/8 of 4.8 km into metres.

11. 11. A container has a mass of T kg. If it is filled with A kg of flour and B kg of sugar, write a formula for total mass M

12. 12. Express 150 m as a percentage of 1.5 km.

13. 13. If a = -3 and b = 4, evaluate: 3a - 2b.

14. 14. Find the area of a trapezium with bases 8 cm and 5 cm, and height 6 cm.

15. 15. Simplify: 2(x + 3y) - 3(2y - x)

16. 16. A person walks 10500 steps in a day. If 1 km ≈ 1400 steps, how many km did they walk?

Part C (5 marks each)

1. 1. The table below shows favourite sports of 30 students:■ Football: 12, Cricket: 7, Basketball: 6, Tennis: 5■ (i) W

2. 2. Complete the bill:■ 2½ kg of sugar at Rs. 320 per kg = ?■ 5 bananas at Rs. 60 each = ?■ 1¾ kg of flour at Rs

3. 3. A square has area 121 cm².■ (i) Find the side length of the square.■ (ii) A rectangle has same area but width is

4. 4. Draw a pie chart to represent the following data:■ Red - 90°, Blue - 60°, Green - 120°, Yellow - 90°■ Label all s

5. 5. A farmer has a rectangular field 60 m by 40 m. He wants to build a path 2 m wide around the field.■ (i) Find the a